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Pathology

HISTOPATHOLOGICAL STUDY OF PROSTATIC LESION.

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ABSTRACT

AIMS & OBJECTIVE: A study of prostatic lesion to find out the incidence, age distribution and histopathological features.

MATERIAL AND METHOD: This study included total 80 cases of patient attending surgery OPD with lower urinary tract symptoms and USG showing increased prostatic volume. Specimen included both prostatectomy and transurethral resection of prostate(TURP)

RESULTS & CONCLUSION: Total 80 prostatic specimen were observed 75(93.7%) were benign and 5(6.2%) were malignant. Age group of 61-70 years was a common peak age group for both benign and malignant. Of all benign lesion adenofibromatous hyperplasia was the commonest. In malignant cases adenocarcinoma was commonest with 80% cases as gleson score 6.

KEYWORDS : Histopathological, Lower urinary tract symptoms, Prostatectomy, transurethral resection of prostate(TURP), Adenofibromatous hyperplasia, Adenocarcinoma.

INTRODUCTION

Prostatic disease is responsible for significant morbidity and mortality in men throughout the world. Accurate diagnosis requires proper clinical history imaging details and histopathological evaluation. Benign prostatic hyperplasia is most common cause of prostate enlargement [1] and presents with symptoms of dysfunctional voiding & storage problem as well as complication like UTI and renal failure. Prostatic cancer is the 2nd most common cause of cancer death in developed country [2, 3] & 4th most common worldwide. Age is the most important risk factor and incidence increases exponentially with age [4]. Adenocarcinoma is most type of carcinoma [5] seen in prostate and is graded by widely accepted Gleason grading system [6].

MATERIAL AND METHOD

This study was conducted in department of pathology GMC Bhavnagar Gujarat, India during period of July 2012 to July 2014. This study was approved by Human Ethics Committee (IRB). Total 80 specimen of prostate were included in the study. Tissue was grossed and processed in Automatic Tissue Processor, section were prepared and stained with H&E stain. Observation was made, data recorded and statistically analyzed. Clinical detail & USG finding were recorded from histopathological form attached to specimen.

RESULTS

A total 80 case were analyzed of which 75(93.7%) were benign and 5 (6.2%) were malignant. 61- 70 years age group were frequent sufferer of prostatic disease with mean age 64.9 years for benign and 63 years for malignant lesion.

Table 1 Age incidence of prostatic lesion

Age (yrs)	Benign lesion	Malignant lesion	Total
41 – 50	5(6.66%)	1(20%)	6(7.50%)
51 – 60	24(32%)	1(20%)	25(31.25%)
61 – 70	31(41.33%)	2(40%)	33(41.25%)
71 – 80	11(14.66%)	1(20%)	12(15%)
81 – 90	4(5.33%)	0(0%)	4(5%)
Total	75(100%)	5(100%)	80(100%)

Clinical presentation of patient were variable. Dysfunctional voiding & bladder storage problem were common

Table 2 Clinical presentation of prostatic lesion.

Symptoms	Benign lesion	Malignant lesion	Total
Frequency	37(49.33%)	2(40%)	39(48.75%)
Nocturia	25(33.33%)	2(40%)	27(33.75%)
Urgency	8(10.66%)	0(0%)	8(10%)
Hesistency	13(17.33%)	2(40%)	15(18.75%)
Poor stream	10(13.33%)	2(40%)	12(15%)
Dribbling	18(24%)	1(20%)	19(23.75%)
Retention	34(45.33%)	2(40%)	36(45%)
Hematuria	4(5.33%)	3(60%)	5(6.255)
Intermittent Stream	15(20%)	3(60%)	18(22.5%)

In present study 75 cases were benign lesion with variety of microscopic presentation. Adenofibromatous hyperplasia being commonest microscopic presentation.

Table 3 Microscopic finding of benign lesion

Microscopic finding	No of cases
1.Adenofibromatous Hyperplasia	60 (80%)
2.Stromal Hyperplasia	9 (12%)
3.Basal cell Hyperplasia	2 (2.6%)
4.Clear cell Hyperplasia	3 (4%)
5.Squamous Metaplasia	1 (1.3%)
6.Transitional Metaplasia	0 (0%)
7.Cystically Dilated Gland	2(2.6%)
8.Chronic Prostatitis	36 (48%)
9.Granulomatous Prostatitis	2 (2.6%)

Prostatic intraepithelial neoplasia (PIN) were seen in 16 cases mostly associated with benign lesion. PIN 1 was seen in 7 cases showing epithelial crowding, stratification, enlarged nuclei but nuclear chromatin was normal. PIN 2 was seen in 9 cases having cribriform pattern of gland.

Prostatic carcinoma was seen in 5 cases all of them were well differentiated adenocarcinoma. Different growth pattern were seen in malignant cases acinar and cribriform glandular pattern being commenst followed by fused gland, papillary pattern and diffuse infiltrative pattern.

Prostatic carcinoma was graded according to Gleson's grading system. Gleason's score 6 was commonest seen in 4 cases and Gleson's score 7 in 1 case.

Table 4 Final histopathological diagnosis

Final histopathological diagnosis	No.of cases	%
1) NH		
a) Without prostatitis	34	42.5%
b) With prostatitis	20	25%
c) Granulomatous prostatitis	02	2.5%
2. Basal cell hyperplasia	02	2.5%
3. Squamous metaplasia	01	1.2%
4. NH with transitional metaplasia	00	00%
5. Prostatic intraepithelial neoplasia	16	20%
6. Adenocarcinoma	05	6.2%

DISCUSSION

Prostatism is a common malady in geriatric age group. Variety of histopathological lesion was seen in present study. Comparison with study of Mittal et al 7 (185 cases) and Elizabeth et al [8] (1163 cases) is illustrated in table 5.

Table 5 Histopathological diagnosis in different studies

Histopathological Diagnosis	Mittal BV et al (1989)7	Elizabeth et al (2005)8	Present study
Nodular hyperplasia	103 (55.67%)	1029 (88.5%)	60 (75%)
Prostatitis	30 (16.24%)	-	36 (45%)
Granulomatous prostatits	3 (1.62%)	-	2 (2.5%)
Basal cell hyperplasia	10 (5.4%)	-	2 (2.5%)
Metaplasias	19 (10.27%)	-	-
Atypical adenomatous hyperplasia	4 (2.16%)	-	-
Atrophy	3 (1.62%)	-	-
PIN	-	7 (0.6%)	16 (20%)
Carcinoma	13(7.02%)	127 (10.9%)	5(6.2%)

The present study showed majority of lesion as benign (93.7%) of which adenofibromatous hyperplasia was seen in 80% of the cases. Only 2 cases (2.5%) of basal cell hyperplasia were seen in contrast to study of Cleary et al [9] which showed all patients above 60 years had nodular hyperplasia in addition to basal cell hyperplasia. Present study show only one case of squamous metaplasia however Mittal et al [7] showed 11.35% cases having metaplastic epithelium Of 80 cases studied 38 cases had prostitis of which 36 were chronic prostitis and 2 cases were granulomatous prostitis. It closely correlates with Mittal et al study showing 1.6% cases of granulomatous prostitis. Bostwick et al [10] showed more cases of chronic abacterial prostitis compared to bacterial prostitis.

In the present study prostatic carcinoma was seen in 6.2% cases which is low in comparison to most reported series in different part of world [7] but is comparable to Murli et al showing 8.56% case as malignant [14].

Table 6 Prevalence of prostatic carcinoma in different studies

Authors	No.of prostates examined	No.of carcinoma	Prevalence (%)
Newman et al (1982)[11]	500	71	14.0
Murali et al (1985)[12]	222	19	8.56
Moore et al (1986)[11]	143	31	22
Murphy et al (1986)[11]	386	66	17
Yamabe et al – Japan (1986)[11]	191	24	13
Yamabe et al – Netherlands (1986)[11]	452	57	13
Eble and Tejada (1986)[11]	700	132	19
Rohr et al (1987)[11]	457	65	14
Mittal et al (1989)[7]	185	13	7.02
Present study	80	5	6.2

In the present study peak incidence of prostatic carcinoma was seen 61-70 years age group mean age being 63 years.

Table 7 Age incidence of prostatic carcinoma in different studies

Authors	41-60 yrs	61-70 yrs	71-80 yrs	81-90 yrs	Total (%)
Rich (1934)[11]	7	8	12	0	27 (9%)
Moore (1935)[11]	9	18	13	7	47(20%)
Baron & Angrist (1945)[11]	20	26	25	6	54(61%)
Andrews (1949)[11]	2	7	7	-	16(16%)
Edwards et al (1953)[11]	3	10	12	3	28(19%)
Franks (1954)[11]	38	53	70	17	178(20%)
Scott et al (1961)[11]	-	-	36	26	62(39%)
Holund (1980)[11]	2	7	24	13	46(23%)
Mittal et al (1989)[7]	1	6	5	1	13(7.02%)
Present study	2	2	1	-	5(6.2%)

Gleason's score 6 was the commonest in the present study seen 80% of cases and score 7 in 20% cases it closely correlates with Barbian Rich et al (2001) study with most of cases having Gleson's score 6.

Table 8 incidence of gleason's score and prostatic carcinoma

Authors	Gleason score	No.of patients	Incidence of cancer
Babaian Richard et al (2001)13	6	12	24.5%
	7	1	
	8	1	
	9	0	
	10	0	
Present study	6	4	6.2%
	7	1	
	8	0	
	9	0	
	10	0	

CONCLUSION

Prostatic adenofibromatous hyperplasia and adenocarcinoma are common diseases that account for considerable morbidity and mortality in the aging population. Predisposing and protecting factors for these lesions, need to be identified. Interpretation of prostatic biopsies has been, and continues to be a challenge to the pathologist. Combined staging, grading and follow-up study are required to obtain best predictive values. Another obstacle is several forms of therapy may significantly alter the normal and diseased prostatic tissue, making the assessment difficult. Further, immunohistochemistry and molecular genetic analysis are suggested. Screening protocols and awareness programs need to be instituted.

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